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EXAMINER	
STEVENS, THOMAS H	

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/750,100	BARAFF ET AL.	
	Examiner	Art Unit	
	Thomas H. Stevens	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 were re-examined.

Telephone Interview

Drawings

2. Based on applicant's response, objection is withdrawn.

35 USC § 112

3. Applicants explained the inherency of the term "threshold" which overcame the 112 1st rejections.

Claim Rejections - 35 USC § 102

4. Applicants explanation between dynamic object and kinematic based objects (i.e., stated in applicant's remarks dated 3/8/05 page: 8), and how both differentiate from the Popovic 1999 reference, was persuasive; thus the rejection is withdrawn. However, the examiner **did not, verbatim,** state canceling the former rejection would place this application in condition for allowance.

Examiner has cited new art in light of clarification of claims by the applicant.

Non-Final Office Action (3rd Office Action)

Claim Rejections - 35 USC § 103

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-20 are rejected under 35 U.S.C. 103 (a) as obvious by Stoneking et al. (U.S. Patent 5,982,390 (1999)), in view of Even-Sohar (U.S. Patent (6,738,065 (2000)). Stoneking et al. Teaches a method and system support the definition, authentication and enforcement of constraints on speech, appearance, movements, associations (Stoneking: abstract) with coordination between kinematics, or dynamic simulation, or by traditional animation techniques (Stoneking: column 3, lines 8-10) and one approach to controlling character interaction, such as comic strips (Stoneking: column 4, lines 7-9); but doesn't teach inverse kinematics. Even-Sohar teaches customize animation by way of human motion of forward and inverse kinematics (Even: column 2, lines 55-60).

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify Stoneking et al., by way of Even-Sohar since it would have been advantageous to capture a human body movements (Even: column 1, lines 60-66) as a

baseline for natural and exaggerated animated images (Even: column 1, lines 20-23, column 2, lines 31-39; column 4, lines 42-44; column 7, lines 24-25).

Claim 1. A method of simulating relative motion of objects (Stoneking: column 3, lines 8-10) in computer animation comprising: providing a motion of a kinematic object, (Even: column 6, lines 33-46) where the kinematic object is an element of a computer animation display; providing at least one dynamic object associated with said kinematic object (Even: column 2, lines 61-67; column 1, lines 41-46), where said at least one dynamic object is another element of the computer animation display and where motion of said at least one dynamic object is influenced by the motion of the kinematic object, (Even: column 2, lines 61-67) wherein the motion of said at least one dynamic object is simulated using a physically-based numerical technique (Even: figure 4 with column 3, lines 5-17); and manipulating the motion of said at least one dynamic object in response to the motion of the kinematic object when the motion of the kinematic object exceeds a predetermined threshold (Even: column 2, lines 40-49 with design choice); and displaying the elements of the computer animation display, (Even: figures 3 and 4 with column 12, 60-65), including associated motions of said elements.

Claim 2. A method of simulating relative motion of objects according to claim 1 (Stoneking: column 3, lines 8-10; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Even: figures 3 and 4 with column 12, 60-65; Even: column 2, lines 40-49) wherein said manipulating the motion of said at least one dynamic object

comprises compensating for motions of said at least one dynamic object when the motion of the kinematic object motion exceeds the predetermined threshold (Even: column 2, lines 40-49 with design choice).

Claim 3. A method of simulating relative motion of objects according to claim 2 (Stoneking: column 3, lines 8-10; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Even: figures 3 and 4 with column 12, 60-65; Even: column 2, lines 40-49) the motion of said at least one dynamic object manipulated when the motion of the kinematic object (Even: column 1, lines 43-51) comprises accelerations that are unrealistic for humans (Even: column 2, lines 43-47; column 4, lines 40-43; column 5, lines 3-5) .

Claim 4. A method of simulating relative motion of objects according to claim 2 (Stoneking: column 3, lines 8-10; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Even: figures 3 and 4 with column 12, 60-65; Even: column 2, lines 40-49) wherein the manipulating comprises compensating for the motion of said at least one dynamic object when the kinematic object undergoes accelerated motions (Even: column 1, lines 43-51) above a predetermined limit (design choice).

Claim 5. A method of simulating relative motion of objects according to 2 (Stoneking: column 3, lines 8-10; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Even: figures 3 and 4 with column 12, 60-65; Even: column 2, lines 40-49) claim

wherein said kinematic object is an animated character (Stoneking: column 3, lines 1-11; column 18, line 51) and said at least one dynamic object is coupled to the animated character.

Claim 6. A method of simulating relative motion of objects according to 2 (Stoneking: column 3, lines 8-10; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Even: figures 3 and 4 with column 12, 60-65; Even: column 2, lines 40-49) claim wherein said at least one dynamic object is a representation of attached to the animated character (Stoneking: column 3, lines 1-11; column 18, line 51).

Claim 7. A method of simulating relative motion of objects according to claim 5 (Stoneking: column 3, lines 8-10; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Even: figures 3 and 4 with column 12, 60-65; Even: column 2, lines 40-49; Stoneking: column 3, lines 1-11; column 18, line 51) wherein said at least one dynamic object is a representation of clothing attached to the animated character (Stoneking: column 3, lines 1-11; column 18, line 51; column 4, line 9).

Claim 8. A method of simulating relative motion of objects according to claim 1 (Stoneking: column 3, lines 8-10; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Even: figures 3 and 4 with column 12, 60-65; Even: column 2, lines 40-49 wherein said at least one dynamic object comprises a first set of dynamic objects and a second set of dynamic objects (Even: column 61-67) and manipulating

the motion of said at least one dynamic object (Even: column 2, lines 61-67) comprises selectively manipulating motions of said first set of dynamic objects with respect to a first reference point on said kinematic object (Even: column 1, lines 44-50) and selectively manipulating motions of said second set of dynamic objects with respect to a second reference point (Even: column 1, lines 50-60) on said kinematic object (Even: column 1, lines 44-50).

Claim 9. A method of simulating relative motion of objects according to claim 1 (Stoneking: column 3, lines 8-10; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Even: figures 3 and 4 with column 12, 60-65; Even: column 2, lines 40-49) wherein said at least one dynamic object comprises a plurality of dynamic objects coupled to a plurality of reference points on said kinematic object (Even: column 1, lines 43-51 with design choice) and wherein said step the motions motion of said at least one dynamic object (Even: column 2, lines 61-65) comprises manipulating the motions of each of said plurality of dynamic objects with respect to said plurality of reference points coupled thereto.

Claim 10. A method of simulating relative motion of objects according to claim 9 (Stoneking: column 3, lines 8-10; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Even: figures 3 and 4 with column 12, 60-65; Even: column 2, lines 40-49) wherein said kinematic object is an animated character (Stoneking: column 3, lines 1-11; column 18, line 51) and said plurality of dynamic objects are coupled to

the animated character (Stoneking: column 3, lines 1-11; column 18, line 51) and said plurality of reference points are different points (Even: column 11, lines 16-23 with figure 3) on the animated character (Stoneking: column 3, lines 1-11; column 18, line 51; column 4, line 9).

Claim 11. A method of simulating relative motion of objects according to claim 9 (Stoneking: column 3, lines 8-10; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Even: figures 3 and 4 with column 12, 60-65; Even: column 2, lines 40-49) wherein manipulating (Even: column 12, lines 62-65; and column 7, lines 22-27) comprises compensating for motions of said plurality of dynamic objects when the kinematic (Stoneking: column 3, lines 9-11) object undergoes exaggerated motion.

Claim 12. The method of claim 1 (Stoneking: column 3, lines 8-10; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Even: figures 3 and 4 with column 12, 60-65; Even: column 2, lines 40-49) wherein manipulating the motion of said at least one dynamic object comprises manipulating the motion of the said at least one dynamic object (Stoneking: column 3, lines 9-11) when acceleration of the kinematic (Even: column 1, lines 44-50) object exceeds the predetermined threshold (Even: column 2, lines 40-49 with design choice).

Claim 13. A computer animation system comprising: a processor (Even: column 16, lines 62-67; Stoneking: column 3, lines 5-10); a display (Even: column 16, lines 62-67);

wherein the processor is configured to: receive information specifying motion for a kinematic object (Even: column 6, lines 33-46); compute motion for a dynamic object based upon the motion of the kinematic object, wherein the motion of the dynamic object (Even: column 2, lines 61-67) is specified using a physically-based numerical technique (Even: figure 4 with column 3, lines 5-17); and manipulate the motion of the dynamic object in response to the motion of the kinematic object when the motion of the kinematic object exceeds (Stoneking: column 3, lines 9-11) a predetermined threshold (Even: column 2, lines 40-49 with design choice); and wherein the display is configured to display the kinematic object and the dynamic object (Stoneking: column 3, lines 5-10) and their associated motions (Even: column 5, lines 1-6).

Claim 14. The method of claim 13, (Even: column 16, lines 62-67; Stoneking: column 3, lines 5-10; Even: column 16, lines 62-67; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Stoneking: column 3, lines 9-11) wherein the processor is configured to manipulate the motion of the dynamic object when acceleration of the kinematic object exceeds the predetermined threshold (Even: column 2, lines 40-49 with design choice).

Claim 15. The method of claim 13(Even: column 16, lines 62-67; Stoneking: column 3, lines 5-10; Even: column 16, lines 62-67; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Stoneking: column 3, lines 9-11) wherein the kinematic object

represents an animated character and the dynamic object represents a hair attached to the animated character (Even: column 14, lines 5-6).

Claim 16. The method of claim 13 (Even: column 16, lines 62-67; Stoneking: column 3, lines 5-10; Even: column 16, lines 62-67; Even: column 6, lines 33-46; Even: figure 4 with column 3, lines 5-17; Stoneking: column 3, lines 9-11) wherein the kinematic object represent an animated character and the dynamic object represents clothing ("most comic book characters have clothing": Stoneking: column 4, lines 1-9) attached to the animated character.

Claim 17. A computer animation apparatus comprising (Even: column 16, lines 62-67; Stoneking: column 3, lines 5-10): means for receiving information specifying motion for a kinematic object; means for computing motion for a dynamic object based upon the motion of the kinematic object, (Even: column 2, lines 61-67; column 1, lines 41-46) wherein the motion of the dynamic object is specified using a physically-based numerical technique (Even: figure 4 with column 3, lines 5-17); means for manipulating the motion of the dynamic object in response to the motion of the kinematic object when the motion of the kinematic object exceeds a predetermined threshold (Even: column 2, lines 40-49 with design choice); and means for displaying (Even: column 16, lines 60-67) the kinematic object and the dynamic object and their associated motions (Even: column 3, lines 1-11).

Claim 18. A computer program product stored on a computer-readable storage (Even: column 16, lines 62-67; Stoneking: column 3, lines 5-10) medium for simulating relative motion of objects (Stoneking: column 3, lines 1-11), the computer program product comprising: code for receiving information (Stoneking: column 7, lines 21-40) specifying motion for a kinematic object; code for computing motion for a dynamic object based upon the motion of the kinematic object, wherein the motion of the dynamic object is specified using a physically-based numerical technique (Even: figure 4 with column 3, lines 5-17); code for manipulating the motion of the dynamic object in response to the motion of the kinematic object when the motion of the kinematic object exceeds a predetermined threshold (Even: column 2, lines 40-49 with design choice); and code for displaying the kinematic object (Stoneking: column 7,lines 21-42, column 3, lines 5-11; and Even: column 16, lines 60-67).

Claim 19. A computer-implemented method of simulating relative motion of objects in computer animation, the method comprising: receiving information specifying motion for a kinematic object (Stoneking: column 7,lines 21-42, column 3, lines 5-11; and Even: column 16, lines 60-67); computing motion for a dynamic object based upon the motion of the kinematic object, wherein the motion of the dynamic object is specified using a physically-based numerical technique (Even: figure 4 with column 3, lines 5-17); and manipulating the motion of the dynamic object in response to the motion of the kinematic object when the motion of the kinematic object exceeds a predetermined threshold (Even: column 2, lines 40-49 with design choice).

Claim 20. The method of claim 19 (Stoneking: column 7,lines 21-42, column 3, lines 5-11; and Even: column 16, lines 60-67; Even: figure 4 with column 3, lines 5-17) wherein manipulating the motion of the dynamic object comprises manipulating the motion of the dynamic object when acceleration of the kinematic object exceeds the predetermined threshold (Even: column 2, 40-49 with design choice).

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm) or contact Supervisor Mr. Kevin Teska at (571) 272-3716. Fax number is 571-273-3715.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

March 21, 2005

THS